REMARKS/ARGUMENTS

Claims 1-10, 12-16, and 18-23 were previously pending in the application. Claims 22-23 are canceled, claims 1, 9, and 20 are amended, and new claims 24-27 are added herein. Assuming the entry of this amendment, claims 1-10, 12-16, 18-21, and 24-27 are now pending in the application. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

In paragraph 3 of the office action, the Examiner rejected claims 1-2, 4-7, and 18-20 under 35 U.S.C. 103(a) as being unpatentable over Brueske in view of Younis. In paragraph 4, the Examiner rejected claims 3, 8-10, 12-16, and 22 under 35 U.S.C. 103(a) as being unpatentable over Brueske in view of Younis in further view of Lin. In paragraph 5, the Examiner rejected claims 21 and 23 under 35 U.S.C. 103(a) as being unpatentable over Brueske in view of Younis in further view of Hess. For the following reasons, the Applicant submits that all of the now-pending claims are allowable over the cited references.

Claim History

In the first office action dated 05/03/07, the Examiner rejected independent claims 1 and 9 under 35 U.S.C. 103(a) as being unpatentable over Takaki in view of Chalmers. In response, without amending claims 1 and 9, the Applicant argued that the rejections of claims 1 and 9 were improper.

In the second office action dated 12/11/07, the Examiner rejected claims 1 and 9 under 35 U.S.C. 103(a) as being unpatentable over Brueske in view of Younis. In response, without amending claims 1 and 9, the Applicant argued that the rejections of claims 1 and 9 were improper.

In the third office action dated 05/22/08, the Examiner maintained the rejections of claims 1 and 9 under 35 U.S.C. 103(a) as being unpatentable over Brueske in view of Younis, but indicated the allowability of claim 17, which depended from claim 1, and the allowability of claim 11, which depended from claim 9. In response, the Applicant amended claim 1 to be equivalent to allowable claim 17 rewritten in independent form and claim 9 to be equivalent to allowable claim 11.

In the pending fourth office action, the Examiner withdrew the indicated allowability of the subject matter of claims 11 and 17. In response, the Applicant has amended claims 1 and 9 to remove the features previously added from claims 17 and 11, respectively. In addition, the Applicant has added new claims 24 and 26, which are equivalent to previously presented claims 17 and 11, respectively.

The net effect of this prosecution history is that:

- Currently amended claim 1 is equivalent to original claim 1;
- Currently amended claim 9 is equivalent to original claim 9;
- New claim 24 is equivalent to previously pending claim 17, which was added in response to the first office action; and
- New claim 26 is equivalent to original claim 11.

Claims 1 and 9

According to claim 1, "the attenuation determination is based on the amplitude of the digital spread-spectrum signal prior to the interference-compensation filtering and the de-spreading." Note that the digital spread-spectrum signal is generated by the digitizing step of claim 1. Thus, the digital spread-

spectrum signal of claim 1 is a signal after the digitizing of claim 1, but prior to both the interference-compensation filtering and the de-spreading of claim 1.

Fig. 6 shows an example of the invention of claim 1, in which digital IF signal 620, which is generated by ADC 618 prior to both the interference-compensation filtering of filter 628 and the de-spreading of digital processing 632, is an example of the digital spread-spectrum signal of claim 1.

In rejecting claim 1, the Examiner argued that Brueske discloses:

- "selectively attenuating the received analog spread-spectrum signal to generate a selectively attenuated analog spread-spectrum signal," citing column 4, lines 22-33;
- "filtering ... the digital spread-spectrum signal in an attempt to compensate for interference in the received analog spread-spectrum signal," citing digital filters 323 and 325 of Fig. 3 and column 4, lines 63-67; and
- "the attenuation determination is based on the amplitude of the digital spread-spectrum signal prior to the interference-compensation filtering," citing column 4, lines 42-44.

In Brueske's Fig. 3, filters 315 and 317 are variable dynamic range filters controlled by the AGC control 307. See, e.g., column 4, lines 22-24. According to Brueske, both filters 315 and 317 "are used to variably control the dynamic range of each channel based upon control input from an on-channel detector 327 and off channel detector 313." See column 4, lines 25-28. As explicitly shown in Fig. 3 of Brueske, off-channel detector 313 receives analog signals prior to A/D converters 319 and 321, while on-channel detector 327 receives digital signals after digital filters 323 and 325.

Thus, in Brueske, AGC control 307 does not receive any digital signal prior to digital filters 323 and 325. The signals in Brueske that are most analogous to "the digital spread-spectrum signal prior to the interference-compensation filtering" of claim 1 are the digital signals generated by A/D converters 319 and 321 and applied to digital filters 323 and 325. Significantly, however, Brueske does not teach or even suggest using those signals in any part of the processing of AGC control 307.

To the extent that the Examiner is correct that (i) the variable control by Brueske's AGC control 307 over the dynamic range of Brueske's filters 315 and 317 is an example of attenuation determination and (ii) Brueske's filters 315 and 317 perform an example of interference-compensation filtering (neither of which does the Applicant necessarily admit), the Applicant submits that Brueske does not teach or even suggest attenuation determination based on the amplitude of a digital spread-spectrum signal prior to interference-compensation filtering.

Nor does Younis teach or even suggest the features of claim 1 missing from Brueske.

For all these reasons, the Applicant submits that claim 1 is allowable over the cited references. For similar reasons, the Applicant submits that claim 9 is allowable over the cited references. Since the rest of the claims depend directly or indirectly from claims 1 and 9, it is further submitted that those claims are also allowable over the cited references.

Claim 20

Claim 20 has been amended to clarify that a transition from (a) the received analog spread-spectrum signal not being attenuated to (b) the received analog spread-spectrum signal being attenuated

occurs after (i) determining a first duration that the amplitude of the digital spread-spectrum signal is greater than the first threshold and (ii) comparing that first duration to a first specified amount of time to determine that the first duration is greater than the first specified amount of time. In addition, claim 20 has been amended to clarify that a transition from (a) the received analog spread-spectrum signal being attenuated to (b) the received analog spread-spectrum signal not being attenuated occurs after (i) determining a second duration that the amplitude of the digital spread-spectrum signal is less than the second threshold and (ii) comparing that second duration to a second specified amount of time to determine that the second duration is greater than the second specified amount of time. Support for the amendments to claim 20 is found, for example, on page 4, lines 11-14.

In rejecting claim 20, the Examiner cited column 23, lines 10-15, of Younis as disclosing transitions occurring after the amplitude of the digital spread-spectrum signal is greater than or less than a threshold for a specified amount of time. Column 23, lines 10-15, of Younis states:

> "For the exemplary embodiment described above, each dynamic range threshold comprises an upper threshold and a lower threshold. The loop with the higher dynamic range is not enabled unless the required dynamic range exceeds the upper threshold and the loop with the lower dynamic range is not enabled unless the required dynamic range falls below the lower threshold."

These teaching in Younis are very different from (i) determining a duration that the amplitude of the digital spread-spectrum signal is either greater than or less than a threshold and then (ii) comparing the duration to a specified amount of time to determine that the duration is greater than the specified amount of time. In Younis, no durations are determined and then compared to thresholds. Rather, in Younis, as soon as the amplitude is greater than or less than the corresponding threshold, the corresponding loop is enabled. In the invention of claim 20, the amplitude must be greater than or less than the corresponding threshold for a specified amount of time before the corresponding transition will occur.

The Applicant submits that this provides additional reasons for the allowability of claim 20 over the cited references.

New Claims 25 and 27

According to new claim 25, the attenuation determination is based on the amplitude of the digital spread-spectrum signal only after the digitizing and prior to the interference-compensation filtering and the de-spreading. According to new claim 27, the controller controls the variable attenuator based on the amplitude of the digital spread-spectrum signal only after the digitizing by the ADC and prior to the interference-compensation filtering by the interference-compensation filter and the de-spreading of the digital processor. Support for new claims 25 and 27 is found, for example, in Fig. 6, where the only input to controller 612 is digital spread-spectrum signal 620 generated by ADC 618, where signal 620 is after the digitizing of ADC 618 and prior to the interference-compensation filtering of filter 628 and the de-spreading of digital processing 632.

Brueske's AGC control 307 uses two different sets of signals to control filters 315 and 317: (1) the analog signals applied to off-channel detector 313 prior to the digitizing of A/D converters 319 and 321 and (2) digital signals 329 and 331 applied to on-channel detector 327 after the filtering of filters 323 and 325. See, e.g., Fig. 3 and column 4, lines 25-28. This is different from the invention of claims 25 and 27 where only one signal is used to make the attenuation determination.

The applicant submits that this provides additional reasons for the allowability of claims 25 and 27 over the cited references.

Conclusion

For the reasons set forth above, the Applicant respectfully submits that the rejections of claims 1-23 under Section 103(a) have been overcome. In addition, new claims 24-27 patentably define over the cited references.

In view of the above amendments and remarks, the Applicant believes that the now-pending claims are in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Respectfully submitted,

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